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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/602,517

06/24/2003

Jack Chen

M311

8871

7590

11/08/2004

Robert L. Marsh  
P.O. Box 4468  
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EXAMINER

FITZGERALD, JOHN P

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/602,517	CHEN, JACK	
	<b>Examiner</b>	<b>Art Unit</b>	
	John P Fitzgerald	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,9-12,18 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,9-12,18 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>060104</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 18 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 depends upon a canceled claim 13, and thus has insufficient antecedent basis regarding the element "the electronic output."

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

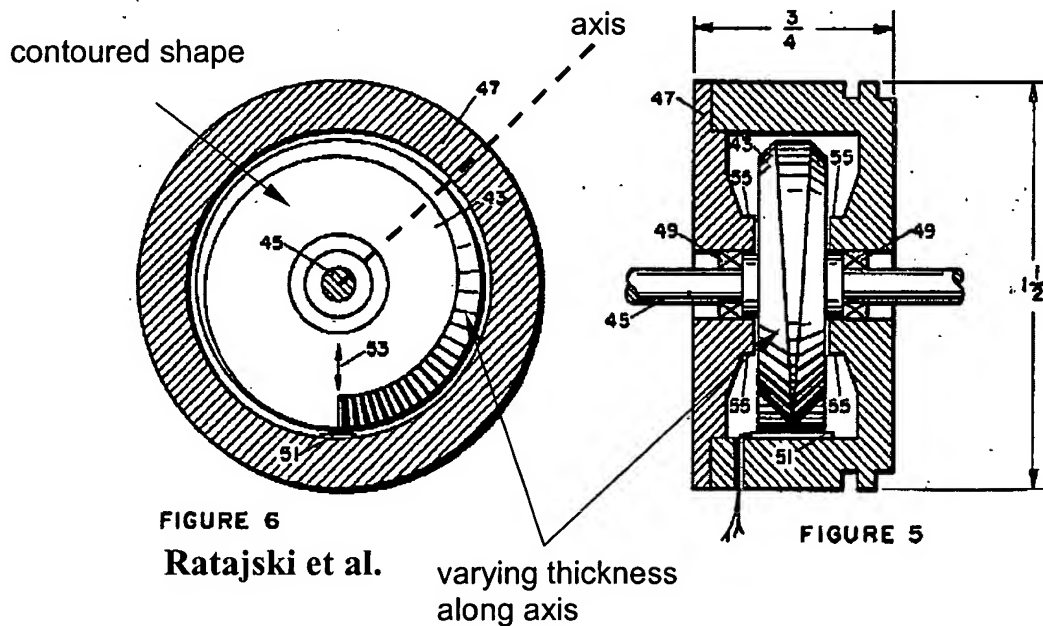
4. Claims 1-5, 7, 9-12, 18 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,584,838 to Lorenzen and US 3,112,464 to Ratajski et al. Lorenzen discloses a device (Figs. 1-26) for measuring the volume of a flammable liquid (i.e. fuels, as recited in claims 10-12) (Lorenzen: col. 1, lines 39-44) in a container (87) having a float (80) moveable in response to changes in the volume (liquid level) of the liquid in the container, a magnetically conductive member (88, 21, 28) (a magnet, as recited in claim 5)) having a

Art Unit: 2856

magnetic field passing therethrough, a Hall-Effect sensor (85, 28) (as recited in claim 9) for sensing the strength of a portion of the magnetic field and for generating a signal responsive to the strength and thus indicative of the volume of liquid in the container as means connected to the float that moves the magnetically conductive member rotationally (i.e. non-linearly (see Figs. 6 & 7, Lorenzen: cols. 4 and 5), as recited in claim 2) relative to the sensor, thus altering the spacing between the sensor and the magnetically conductive member (see Figs. 21 & 22) (as recited in claim 4) and thus the strength of the magnetic field exposed to the sensor varies as a function of the volume of the container and means (32) responsive to the signal for displaying the volume of the container, the sensor outputting voltage to an electronic device (see data plots). Lorenzen does not expressly disclose a device for measuring the volume of a liquid wherein the magnetically conductive member having defined north and south poles, the magnetic field passing therethrough, and an axis defined by the north and south poles, the magnetically conductive member having a contoured shape (note: a circle is a contoured shape) and a thickness perpendicular to the axis that varies across the contoured shape wherein a greater magnetic field passes through thicker portions of the contour than through thinner portions thereof, as recited in claims 1 and 24. Ratajski et al. teach a rotating Hall Effect device (Figs. 1-6) having a rotating magnetically conductive member (see Fig. 6 below) that is polarized radially (i.e. having a north and south pole defining an axis) so that one pole is distributed over a contoured shape/surface (Ratajski et al., col. 2, lines 41-45), wherein the thickness perpendicular to the axis that varies across the contoured shape wherein a greater magnetic field passes through thicker portions of the contour than the thinner portions thereof, which is sensed by a sensor (23) positioned in a spatial relation from the magnetic member sensing the strength of a portion of the

Art Unit: 2856

magnetic field through the thinner/thicker regions as the magnetic member is rotated. (Ratajski et al.: col. 2, lines 52-72). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the contoured magnetic member taught by Ratajski et al., modifying the device for measuring the volume of a liquid disclosed by Lorenzen, thus providing a Hall Effect device that produces an output signal varying in accordance with the angular position with high resolution thus providing detection of a much smaller change of angular position, leading to higher accuracy of measured fluid level (Ratajski et al.: col. 4, lines 20-29).



### *Response to Arguments*

5. Applicant's arguments with respect to claims 1-5, 7, 9-12 and 18 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fitzgerald whose telephone number is (571) 272-2843. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams, can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR

Art Unit: 2856

only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JF

11/03/2004



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